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## INSTALLATION RESTORATION PROGRAM

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Addendum to the  
Phase I Records Search

(1)

For Air Force Reserve and  
Air National Guard Facilities at  
General Billy Mitchell Field  
Milwaukee, Wisconsin

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Hazardous Materials Technical Center

November 1986

12-7-86

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ADDENDUM TO THE INSTALLATION  
RESTORATION PROGRAM PHASE I RECORDS SEARCH

FOR AIR FORCE RESERVE AND  
AIR NATIONAL GUARD FACILITIES AT GENERAL  
BILLY MITCHELL FIELD, MILWAUKEE, WISCONSIN

November 1986



Prepared for

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Andrews Air Force Base, Maryland 20331-6008

Prepared by

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## INTRODUCTION

On 8-11 September 1986, a site visit was conducted by the Hazardous Materials Technical Center (HMTC) to the General Mitchell Air National Guard Base (ANGB), Milwaukee, Wisconsin. The purpose of the site visit was to conduct interviews and gather records necessary to prepare an addendum to the November 1984 "Installation Restoration Program (IRP) Phase I Records Search for the Air Force Reserve (AFRES) and Air National Guard (ANG) facilities at General Billy Mitchell Field, Milwaukee, Wisconsin," performed by Roy F. Weston, Inc. (Weston Report).

The intent of the HMTC site visit, and of this addendum, is to update the 1984 Weston Report, and to verify for the ANG, the data contained in the original Records Search. This addendum is not designed to stand alone as a separate document and should be read in conjunction with the Weston Report.

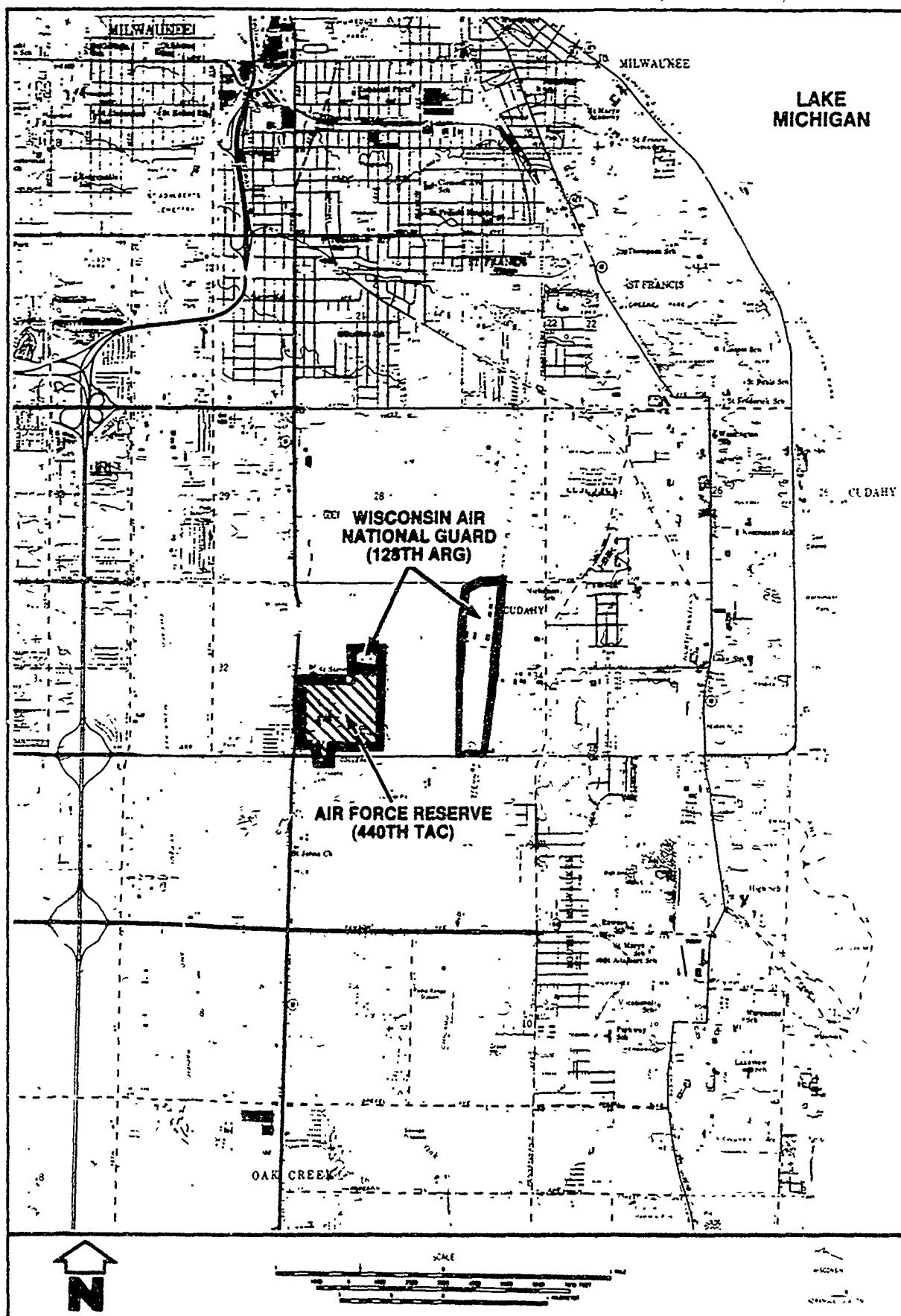
The Weston Records Search was conducted for AFRES, although it included ANG operations. The scope of this addendum includes only operations occurring at General Mitchell ANGB, and does not address AFRES operations. The Wisconsin ANG occupies two discrete locations at General Billy Mitchell Field (see Figure 1). The largest area is occupied by the 128th Air Refueling Group (ARG), Wisconsin ANG. A smaller portion of the Wisconsin ANG property is occupied by the 128th Tactical Control Flight (TCF). This area borders the AFRES facility, and is physically separate from the portion of the base occupied by the 128th ARG.

General background information regarding the environmental setting and installation description of the General Mitchell (ANGB) are contained within the Weston Report. Background data supporting these descriptions has been reviewed by HMTC and, except where noted, are considered an accurate presentation of physical and environmental conditions existing at General Mitchell ANGB. The environmental setting is briefly addressed in this addendum to add additional pertinent data, to clarify points made in the Weston Report, and to characterize specific sites on the base. However, for a

Figure 1.\*

HMTD

Location of General Mitchell ANGB, Milwaukee, Wisconsin.



\*Adapted from Weston Records Search.

complete description of the environmental setting, the reader should refer to the Weston Report.

## 1. ENVIRONMENTAL SETTING

### a. Surface Drainage

The area at General Billy Mitchell Field now occupied by the Wisconsin ANG was formerly swamp land. These swamp areas have been filled and constructed upon. The area immediately north of the Base boundary is a flooded marsh area sometimes referred to as "Bailey's Pond." According to City of Milwaukee Health Department Records, an inactive landfill area south of the Base, which is now owned by the Wisconsin ANG, is also filled swamp land. As a result of its location on former swamp land, the water table at the Base is high, some places within several feet of the surface. The shallow groundwater table contributes to poor drainage on the Base and contributes to groundwater susceptibility to contamination. Low lying areas of the Base near the north gatehouse are prone to minor flooding during periods of snow melt and prolonged precipitation. During the site visit, poor drainage, in the form of standing water, was visible on the 128th TCF portion of the Base. On 6 August 1986, flooding occurred on the Base as a result of 7 inches of rain falling within 24 hours. The worst flooding occurred on the 128th TCF portion of the Base.

### b. Geology and Hydrology

The Weston Report indicates that General Mitchell Field ANGB is underlain by 150 to 300 feet of unconsolidated ground and end moraine glacial deposits. An HMTC review of well log data from wells installed in the vicinity of the Base indicates that glacial deposits at this location range from 80 to 140 feet, and do not extend to 300 feet. These glacial deposits are primarily made up of thick layers of clay and clayey silty till and lenses of stratified sand and gravel. Limestone and dolomite bedrock underlie the glacial deposits. Most wells in the area extend into this bedrock. The general prevalence of thick layers of clay underlying the General Mitchell ANGB would, where present, restrict the hydraulic connection between the

shallow and the deeper bedrock aquifer. However, soil boring and well log data indicate that clay layers are not uniformly present, or in some locations may be interbedded with permeable sands or gravel. Thus, a hydraulic connection may exist which could allow potential surface contaminants to reach the bedrock aquifer.

The City of Milwaukee operates a municipal water supply system, which supplies drinking water for most of the Greater Milwaukee area. The General Mitchell Field Airport, the 128th ARG, AFRES facilities, and residences and industries immediately surrounding ANG property are all connected to the municipal water system. Municipal water supplies are derived from Lake Michigan, located approximately 2 miles from the base. As a result of the distance between the municipal drinking water source and 128th ARG property there is no substantial threat posed to these drinking water supplies by past General Mitchell ANGB activities. However, facilities at the 128th TCF are not connected to the Milwaukee Municipal water supply. The 128th TCF obtains its drinking water from a well located in the Communications Facility Building (Building 301) (see Figure 2 for location). Analysis of 128th TCF well water samples shows contamination by low levels of chlorinated organic compounds. Sampling analysis reports for this well are found in the appendix of this addendum. The 128th TCF well is addressed in more detail in the Findings section of this document.

Wisconsin Department of Natural Resources well drilling records show the presence of numerous private residential wells within a mile of Wisconsin ANG property. It is undetermined if these wells are still operating, and if operating, whether they are used as drinking water sources. Regardless, all residences in the area are connected to the Milwaukee municipal water supply system. Thus, any wells which may still operate in this area do not represent the only source of drinking water for residents.

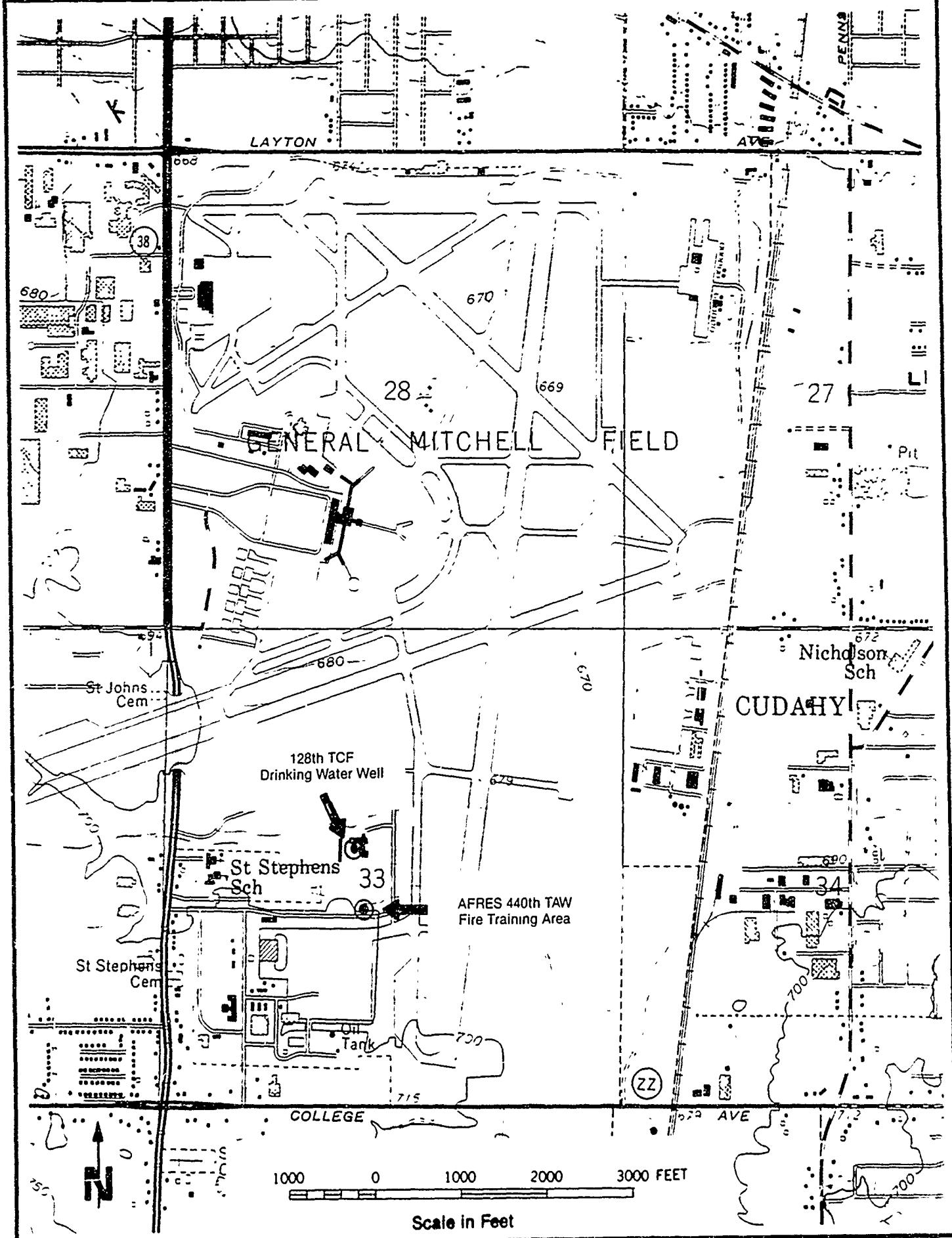
## 2. FINDINGS/CONCLUSIONS

In order to update the Phase I Records Search performed by Weston, and to verify the current accuracy of the data contained in the Weston Report,

Figure 2.

HMTD

Location of AFRES FTA and Wisconsin ANG 128th TCF Well at General Mitchell Field, Milwaukee, Wisconsin.



HMTC reinterviewed personnel at the 128th ARG, and conducted shop visits and site tours. Except for a few instances, current hazardous waste management practices at the General Mitchell ANGB are as described in the Weston Records Search. HMTC also interviewed personnel and conducted site tours at the 128th TCF portion of General Mitchell ANGB. 128th TCF operations were not addressed in the Weston Report. The activities of the 128th TCF, and instances at the 128th ARG where waste management practices vary from those described in the Weston Report, are described below. Locations of sites referred to below are indicated in Figures 2 and 3.

a. 128th ARG Activities

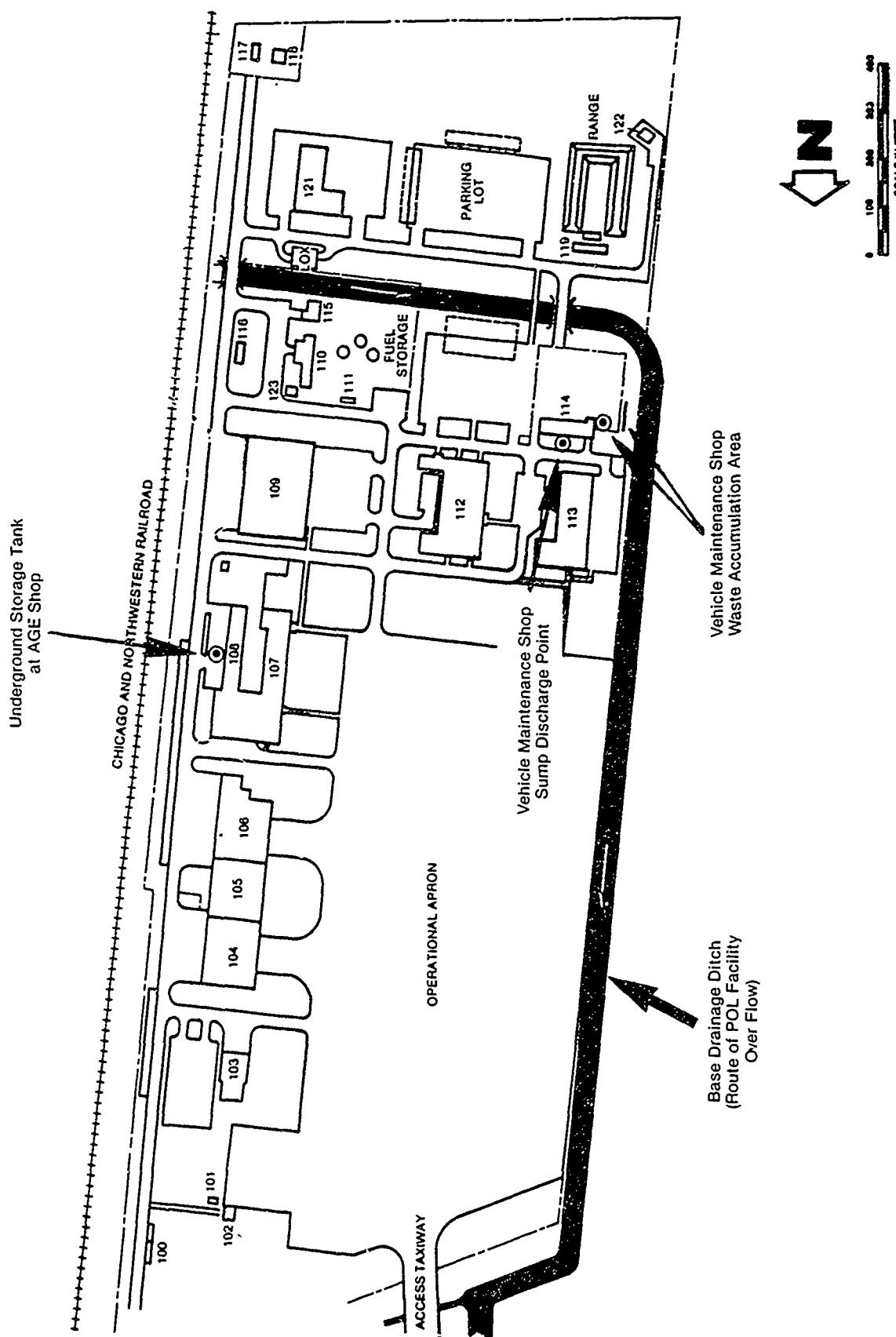
A 500 gallon capacity underground storage tank (UST), located outside the 128th ARG Aerospace Ground Equipment (AGE) Shop (east side of Building 108), was identified as a site of environmental concern due to its use as a hazardous waste storage tank. This tank, which is estimated to have been in place since 1970, is used mainly for temporary storage of used engine oils prior to collection by a contractor. Historically, however, the tank has also served as a collection point for solvent wastes, mostly PD-680 generated by AGE and other shops on the base. For the most part, the practice of comingling spent solvent wastes with used oils has been discontinued. Most shops now collect used solvents in containers at their shop prior to removal to the centralized waste storage location. However, some shops indicate that they are still disposing of solvents in the AGE UST. Several hundred gallons of waste oils and lesser quantities of solvents and paint thinners are temporarily stored in the tank each year. Since there is no evidence of leakage from this tank, a HARM Score is not appropriate. However to determine the tank's integrity, it is recommended that it be leak tested. If the test indicates the tank is unsound, and that leakage may have occurred, IRP Phase II/IVA investigations may be required.

b. 128th ARG POL Spills

Section 4.4.3 of the Weston Report gives an accurate description of fuel spills which have occurred on 128th ARG property up to the time of their

Figure 3.\*

Locations of Environmental Concern  
at General Mitchell Field ANGB, Milwaukee, Wisconsin.



\*Adapted from Weston Records Search.

investigation in 1984. Since 1984, two additional spills have occurred. On 20 February 1986, a JP-4 fuel spill of approximately 400 gallons occurred at the POL facility. The spill resulted from the malfunctioning of a refueling/defueling return valve. The spilled fuel was contained within the concrete diked area of the tank farm. The contained fuel was then drained into the POL facilities' 8,000 gallon capacity underground retention tank/oil/water separator (OWS). As the spill was well within the capacity of the OWS; there was no release of JP-4. This spill was completely contained, with no loss of contaminants to the environment. As such, a HARM Score is not appropriate, and no further action is required at this site.

On 11 March 1986, another release of JP-4 occurred on 128th ARG property. This spill occurred during a flooding event. During the flooding, a sump which prevents overflows from the POL spill retention tank malfunctioned, allowing JP-4 product to flow out of the tank and into a concrete drainage channel. A sheen was visible on the water in the drainage channel. Water in the drainage channel flows west from the POL facility, where it drains into an earthen ditch. The water then flows north, past the aircraft parking apron, ultimately draining into "Bailey's Pond," a marshland located at the low lying north end of the base. Absorbent booms were placed at three points along the drainage channel and were observed to be effective in absorbing the floating POL. The amount of JP-4 lost during this incident is unknown. Because this release occurred during the peak of a flood, JP-4 which was not contained by the booms, or which escaped prior to placement of the booms, floated on top of the running water in the drainage ditch may have washed off the base. Due to the large volume of water flowing in local streams and rivers during the flood, it is doubtful that contaminants would have settled in the drainage ditch or stream bed sediments. Flooding at the time of the spill would ensure a high dilution factor of any contaminants which were not recovered. In light of the above, HARM Scoring is considered unnecessary and no further action is required.

c. Other Locations of Environmental Concern at the 128th ARG

1. Vehicle Maintenance Shop

Two locations at the 128th ARG Vehicle Maintenance Shop show evidence of minor environmental stress. On the west side of the building, there is an asphalt pad used as a hazardous waste accumulation point for Vehicle Maintenance Shop wastes. The asphalt pad also contains the opening for a used oil UST used by vehicle maintenance. Used solvents, paint thinners and oils are stored in drums and containers at this site. When HMTC visited this site, there was an open pail and a pan, containing what appeared to be used oil, sitting on the asphalt area. The condition of the site does not suggest the occurrence of significant spills, but does indicate minor spills or leaks of a recurring nature. There is no grass growing along a small section of the western edge of the asphalt pad, and both the pad and soil along the west edge are oil stained. There are no berms or containment structures at the site to prevent runoff of spilled contaminants. Open pails and containers at this site present the continued potential for contaminant overflow in the event of rainfall.

A second area at the Vehicle Maintenance Building exhibiting visible environmental stress is on the north side of building where water is discharged out of a sump pipe. This sump drains water which seeps into the vehicle maintenance hydraulic lift pit. Small amounts of residual oils and hydraulic fluid are pumped out with this water. These oils have soaked into the ground where the oil/water mixture is discharged. There is a small band of oil-stained soil at the sump discharge point, and grass does not grow on this soil. The extent of vegetative stress at this site is minor, indicating that the amount of contaminants released at the site is small.

Due to the small quantities of materials released at the two Vehicle Maintenance Shop sites, a significant environmental or health threat does not exist. There appears to be negligible potential for contaminant migration offbase or into the water table. This conclusion is based upon consideration of the slow permeability (0.2-0.8 in/hr. (Skinner)) of surface soils in the area and the small quantity of material released. The airport,

ANG (128th ARG), and local residences, are all connected to the Municipile water supply and do not use local groundwater as drinking water. The closest well is that of the 128th TCF, located approximately three quarters of a mile from these sites. This well is screened at a depth of approximately 270 feet. The likelihood that the small volume of contamination present at this site could reach this depth of 270 feet is negligible. The potential for contaminant migration via surface runoff does exist. However, the limited quantities of contaminants present at this site would be sufficiently diluted to negligible concentrations in surface runoff. Because there is little chance for contaminant migration and no likely human receptors, this site was not HARM scored, and with the exception of minor remedial measures such as those suggested below, no further action is required.

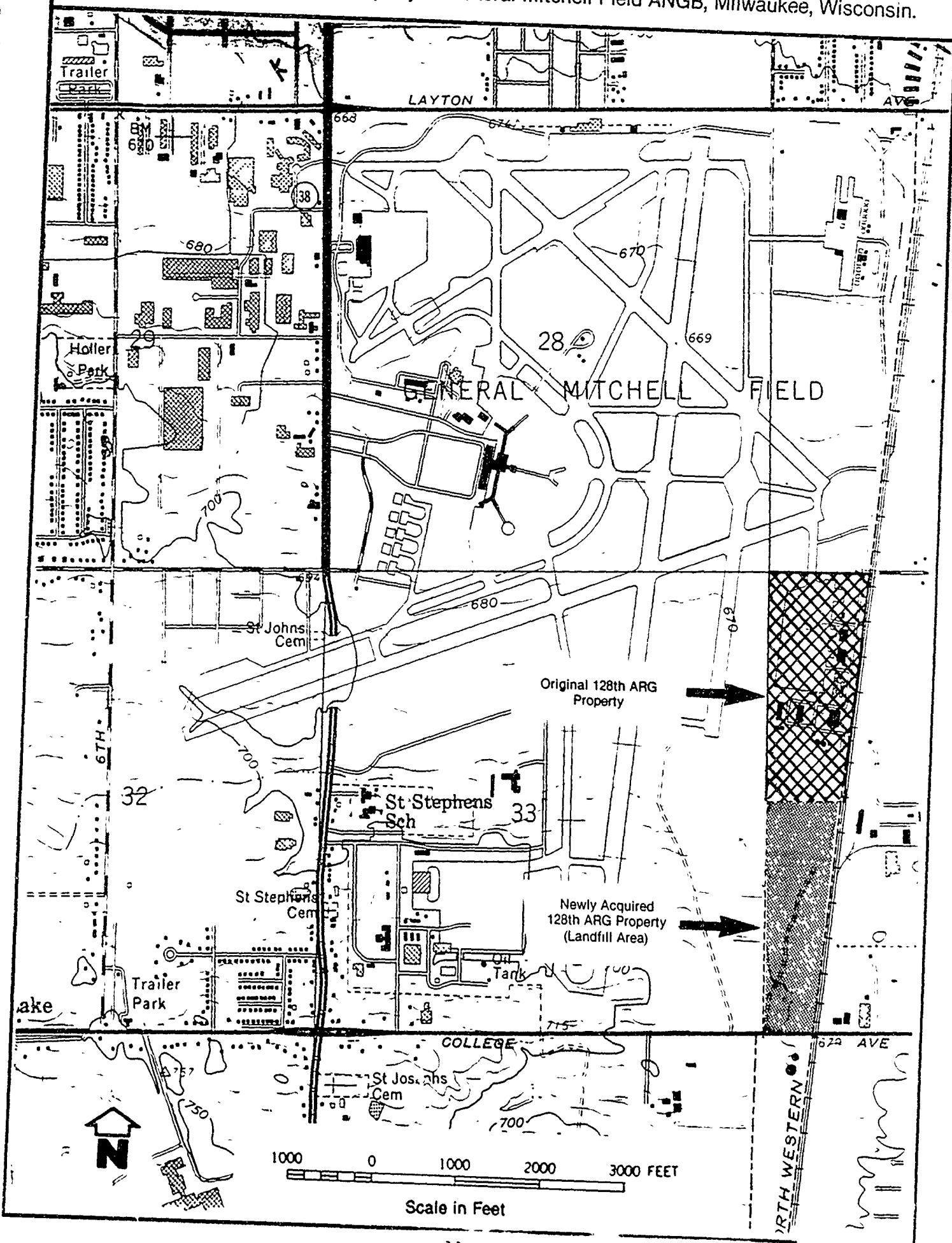
Since the opportunity for continued minor contaminant releases does exist at the Vehicle Maintenance sites, it is recommended that remedial measures be taken to abate their occurrence. Removal of open pans and buckets and the installation of a spill containment curb are possible remedial measures at the vehicle maintenance waste accumulation area. Routing of the sump discharge pipe for the vehicle maintenance hydraulic vehicle lift to an OWS would abate releases of oil-tainted water into the environment. These or similar remedial actions should be initiated as soon as possible.

## 2. Old Rubble Landfill Area

In 1986, 128th ARG acquired a landfill previously owned by the City of Milwaukee. There is no evidence that the landfill was used as a sanitary landfill, or for disposal of hazardous wastes. As is indicated in Figure 4, the landfill is located between what was previously the southern border of the base, and College Avenue. Inquiries were made to the City of Milwaukee Health Department's Sanitation Section concerning the nature and history of the landfill. City records on the subject were sparse. City officials estimate that the landfill was in use prior to the 1940's until 1985. Types of materials disposed of in the landfill are reported to consist of cans, bottles, and scrap metals. In recent years, the site was used for road construction rubble and gravel disposal. The site was also used for

Figure 4.

Newly Acquired Property at General Mitchell Field ANGB, Milwaukee, Wisconsin.



disposal of leaves by the City.

The 128th ARG has excavated several test pits at the landfill with backhoes. The excavations are to a depth of four feet. Materials unearthed are consistent at each of the excavations, consisting of bottles, rusted cans, plastic containers, gravel, concrete, and scrap metal. Earth in other areas of the landfill has been moved and graded in order to provide an entranceway to the 128th ARG. Materials revealed during the grading process were identical to those found in the test pits. Upon touring the landfill, HMTC saw no evidence of hazardous waste disposal from materials exposed on the surface. As there is no evidence that hazardous wastes have ever been disposed of at the landfill, HARM Scoring is not considered necessary, and no further action is required.

#### d. 128th TCF Activities

Hazardous waste related activities at the 128th TCF portion of General Mitchell ANGB were not included in the Weston Report. These activities are summarized below.

The mission of the 128th Tactical Control Flight is to operate and maintain a mobile radar unit. Support for this mission does not require a large scale operation and, consequently, there are few shops which use hazardous materials or generate hazardous waste at the 128th TCF. Shops at the 128th TCF that do generate hazardous wastes requiring disposal include an AGE shop and a Vehicle Maintenance shop. Wastes generated by these shops include P0-680, used oils, battery electrolyte, used batteries, and paint wastes. The majority of these wastes are accumulated in drums at the AGE and Vehicle Maintenance Shops. Once a drum is filled, it is moved to the central hazardous waste accumulation point at the POL facility located on 128th ARG property. Electrolyte is neutralized in sinks and released into the sanitary sewer system for further treatment. Used batteries are recycled through Defense Reutilization Marketing Office. Used oils are stored in a UST in front of the 128th TCF AGE shop. This tank stores only used oil and has not been used to store waste solvents. Other UST at the 128th TCF include a

heating oil tank at the south end of Building 301 and a heating oil tank at the south end of the vehicle maintenance complex. There is also a 2,500 gallon capacity gasoline UST and a 5,000 gallon diesel fuel UST located at the 128th TCF vehicle fueling island. There are no indications of leakage from 128th TCF UST. A diesel fuel spill once occurred at the fueling island as a result of a tank overfill. The spill was quickly contained with absorbent materials and did not escape past the surrounding asphalt surface. Besides this spill, interviewees at the 128th TCF recalled no other hazardous waste releases.

The 128th TCF obtains drinking water from a well located in Building 301 (see Figure 2). Analysis of 128th TCF well water samples shows contamination by low levels of chlorinated organic compounds. Sampling analysis reports for this well are found in the appendix of this addendum. No contaminant spills are reported to have occurred at the 128th TCF to account for the presence of these contaminants. However, the well is located approximately 500 feet topographically downgradient of an operating fire training area (FTA) used by AFRES (see Figure 2).

AFRES fire training operations are described in the Weston Report however, mention of an active downgradient well is omitted. JP-4, spent solvents and other flammable hazardous materials have been routinely released into this FTA, which has been in operation since the activation of the AFRES facility in the 1940s. During the 1960s and 1970s, an area adjacent to the FTA was used as a hazardous waste storage site. Since 1980, AFRES reconstructed the FTA installing berms and a concrete pad. HMTC visited FTA during a rainstorm. At this time, rainwater was running over the berm and onto the surrounding gravel. Prior to 1980, the AFRES FTA consisted of a clay lined pit. The Weston Report questioned the integrity of the pit's clay liner.

Contaminants infiltrating groundwater at the AFRES FTA, which is topographically higher than the 128th TCF well, may or may not flow in the general direction of the well.

Whether or not potential contaminants from the AFRES FTA could

reach the screened interval of the 128th TCF drinking water well depends on the permeability of the clay layers which separate the water table aquifer from the bedrock aquifer. The well log for the 128th TCF well shows the presence of a 30 foot thick clay layer at a depth of approximately 30 feet. Typically, clay layers found in glacial till are of variable continuity, and may contain lenses of higher permeability through which shallow contaminated groundwater could migrate. Pumping of the 128th TCF well could influence the flow of contaminants towards the screened interval of the well by creation of a cone of depression. However, the extent of this influence may be mitigated by the presence of the above mentioned clay layers. It is also possible for the outside of the well casing of the 128th TCF well to act as a conduit for vertical transport of contaminants towards the screened interval of the well.

Thorough characterization of the potential for contamination of the 128th TCF well would require a detailed study. It should be noted that there are numerous industries in the area surrounding Billy Mitchell Field. It is possible that these industries may use and discard chlorinated organic compounds. However, determination of the precise source of groundwater contamination is beyond the scope of this addendum. AFRES is initiating IRP Phase II activities in the vicinity of this well. Phase II investigations are to confirm the presence of groundwater contamination, and if contamination is present, to identify the source and direction of the contaminant plume.

e. Summary

Table 4-7 of the Weston Report identified three areas of environmental concern at the 128th ARG. These areas include a former hazardous waste storage area, located on the east side of Building 109 (the supply building), a storage tank for PD-680 (new product) on the east side of Building 108, and an area used one time for the disposal of JP-4 saturated spill absorbent material. These areas are described in detail in the Weston Report. None of these sites was HARM Scored.

As a result of the HMTc site visit, several additional sites of

environmental concern have been identified at the 128th ARG portion of General Mitchell Field ANGB. These sites include a drainage ditch which was the receptor of a POL release, two locations at the 128th ARG Vehicle Maintenance Shop involving minor contaminant releases, a newly acquired inactive rubble landfill, and a UST at the 128th AGE Shop that is used as an accumulation point for waste oils and used solvents. With the exception of the UST at the AGE Shop, none of the above sites is considered to present a risk to human health and environment, or to have the potential for contaminant migration. The rationale for these conclusions is presented in the Findings section of this addendum. None of these sites is HARM scored and with the exception of minor preventative measures at the Vehicle Maintenance Shop, no further action is required.

The AGE Shop UST presents an environmental concern because of its use as a holding tank for spent solvents since 1970. Although no leaks have been reported from this tank, there is not a strict inventory program to detect loss of its contents, and the tank has not been leak tested. To determine the integrity of this tank, it is recommended that the tank be leak tested. If the leak test indicates the tank is unsound, and that leakage may have occurred, IRP Phase II/IVA investigations of the tank area may be required. However, until evidence of leakage is found, a HARM rating is not considered appropriate.

An additional environmental concern identified involves the operating well located at the 128th TCF, and its proximity to the AFRES FTA. Although there is no direct evidence of contaminant migration from the FTA to the well through groundwater, it is a potential environmental risk which should be investigated. It is recommended that this well be sampled on a regular basis and analyzed for petroleum hydrocarbons, and aromatic and halogenated volatile organics. The FTA has been identified as a site and HARM Scored in the Weston Report. Thus, IRP Phase II investigations will be undertaken at the FTA in the future by AFRES.

## REFERENCES

1. Installation Restoration Program Phase I: Records Search for Air Force Reserve and Air National Guard Facilities at General Billy Mitchell Field; Milwaukee, Wisconsin, Roy F. Weston, Inc., Prepared for: United States Air Force Reserve, Robins Air Force Base, Georgia, November 1984.
2. Skinner, Earl L., Water Resources of Wisconsin - Lake Michigan Basin, Hydrologic Investigations Atlas HA-432 (Sheet 1 of 4); United States Geological Survey, Washington, D.C., 1983.
3. Wisconsin Department of Natural Resources (DNR) Microfiche of Well Construction Reports for Milwaukee County, Milwaukee, Wisconsin, TGN R22E (14 Fiche), Wisconsin DNR; Madison, Wisconsin, Bureau of Water Supply, Private Water Supply Section.
4. City of Milwaukee Health Department Records regarding College Avenue Landfill and interview with Milwaukee Health Department Employee William Hudson on 10 September 1986, City of Milwaukee Health Department, Municipile Building, 841 North Broadway, Milwaukee, Wisconsin.
5. United States Geological Survey, Greendale Quadrangle, Wisconsin, Milwaukee County, 7.5 Minute Series (Topographic) 1958, Photo Revised 1971 and 1976.

APPENDIX

Analytical Results of 128th Well Water Sample

## ENVIRONMENTAL SAMPLING DATA

(Leave this space for mechanical imprint)

0072 PD 013  
128 TACTICAL CONTROL FLIGHT  
GEN. BILLY MITCHELL FIELD  
1919 E. GRANGE AVE  
MILWAUKEE WI 53207

SAMPLING SITE IDENTIFIER (AFR 19-7)							
--	--	--	--	--	--	--	--

BASE WHERE SAMPLE COLLECTED

SAMPLING SITE DESCRIPTION

DATE COLLECTION BEGAN  
185103011 (24 hour clock) TIME COLLECTION BEGAN  
1700

COLLECTION METHOD	<input checked="" type="checkbox"/> GRAB <input type="checkbox"/> COMPOSITE	HOURS
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MAIL REPORTS TO	ORIGINAL	0098	USAF HOSPITAL 75608, MILITARY AIRFIELD, MI 49843-55
(circle if changed)	COPY 1	0072	128 ARG, 1919 E. GRANGE AVE, MILWAUKEE WI 53207
	COPY 2		(ATTN) 128 RNS/DG

SAMPLE COLLECTED BY (Name, Grade, AFSC)	SIGNATURE	AUTOVON
Maj Newcomb, 90770	John R. Newcomb	422-2942

REASON FOR SUBMISSION	R	A-ACCIDENT/INCIDENT R-ROUTINE/PERIODIC	C-COMPLAINT N-NPDES	F-FOLLOWUP/CLEANUP O-OTHER(specify)
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BASE SAMPLE NUMBER	6P 185 0076	00000000000000000000000000000000
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ANALYSES REQUESTED (check appropriate blocks)

	GROUP A		00900		Residue, Settleable	50086		GROUP T
X	Ammonia	00610	Hardness	01045	Residue, Volatile	00505		32104
	Chemical Oxygen Demand	00340	Iron	01051	Silica	00955		32101
	Kjeldahl Nitrogen	00625	Lead	00927	Specific Conductance	00095		32102
X	Nitrate	00620	Magnesium	01055	Sulfate	00945		32105
	Nitrite	00615	Manganese	71900	Sulfite	00740		34418
X	Oil & Grease	00560	Mercury	01067	Surfactants - MBAS	38260		Dibromochloromethane
	Organic Carbon	00680	Nickel	00937	Turbidity	00076		34423
	Orthophosphate	00671	Potassium	01147				Tetrachloroethylene
X	Phosphorus, Total	00665	Selenium	01077				34506
			Silver	00929				1,1,1-Trichloroethane
			Sodium	01059				Trichloroethylene
								39180
	GROUP D							GROUP H
	Cyanide, Total	00720	Thallium	01092	BHC Isomers	39340		Trihalomethanes
	Cyanide, Free	00722	Zinc	01092	Chlordane	39350		39516
					DDT Isomers	39370		
					Dieldrin	39380		
	GROUP E							
	Phenols	32730	GROUP G		Endrin	39390		
			Acidity, Total	70508	Heptachlor	39410		
			Alkalinity, Total	00410	Heptachlor Epoxide	39420		
					Lindane	39782		
					Methoxychlor	39480		
					Toxaphene	39400		
	GROUP F							ON SITE ANALYSES
	Antimony	01097	Alkalinity, Bicarbonate	00425	2,4-D	39730		
X	Arsenic	01002	Bromide	71870	2,4,5-TP-Silvex	39760	Parameter	Value
	Barium	01007	Chloride	00940	39740			
	Beryllium	01012	Color	00080	2,4,5-T	Flow	50050	mgd
	Boron	01022	Fluoride	00951		Chlorine, Total	50060	mg/l
X	Cadmium	01027	Iodide	71865		Dissolved Oxygen	00100	mg/l
X	Calcium	00916	Odor	00086		pH	00400	units
	Chromium, Total	01034	Residue, Total	00500				
X	Chromium VI	01032	Residue, Filterable(TDS)	70300				
	Copper	01042	Residue, Nonfilterable	00530		Temperature	00010	°C
	COMMENTS					Sulfides	00745	

14 RECD: 14-19

2. LABORATORY PERFORMING ANALYSIS DRAFT 1984-01-01 USE DRAFT 1984-01-01	3. LAB SAMPLE NUMBER 17681-686	4. REQUESTOR SAMPLE NUMBER GP850076 00029
5. SAMPLE COLLECTION INFORMATION		6. DATE RECEIVED BY LAB 13 March 85
7. SITE DESCRIPTION 13 MAR 1985 14	8. SITE LOCATION NO 00058 CAL/MIN	9. WEATHER 00041
10. DATE ANALYSIS COMPLETED 5 April 85	11. ON-SITE ANALYTICAL RESULTS	
12. COLLECTION DATE/PERIOD	13. NAME OF COLLECTOR	14. WATER TEMP 000 10 °C
15. SAMPLING TECHNIQUE	16. PH 00400 UNITS	17. Diss O <sub>2</sub> 00300 MG/L
18. REASON FOR SAMPLE SUBMISSION	19. RESULTS OF OTHER ON-SITE ANALYSES	

## ANALYSES REQUESTED AND RESULTS

## A. PRIMARY DRINKING WATER STANDARDS (40CFR 141)

PRESERVATION GROUP F (83)			PRESERVATION GROUP C (84)		
PARAMETER	TOTAL	µG/L	PARAMETER	TOTAL	MG/L
ARSENIC	01002	L10	NITRATE AS N (Cadmium Reduction Method)	00620	0.1
BARIUM	01007	L200	1000 µG/L		10 MG/L
CADMIUM	01027	L10	10. µG/L		
CHROMIUM	01034		50 µG/L		
LEAD	01051	L20	50 µG/L		
MERCURY	71900	L1	2.687 GROUP B ammonia		1.0
SELENTUM	01147	L10	10 µG/L		
SILVER	01077	L10	50 µG/L		

## B. OTHER ANALYSES

PRESERVATION GROUP F			PRESERVATION GROUP G		
PARAMETER	TOTAL	µG/L	PARAMETER	TOTAL	MG/L
COPPER	01042	L20	Acidity, Mineral As CaCO <sub>3</sub>	00436	
IRON	01045	370	Acidity, Total, As CaCO <sub>3</sub>	00435	0
MANGANESE	01055	L50	Alkalinity, Phenol As CaCO <sub>3</sub>	00415	0
ZINC	01092	77	Alkalinity, Total, As CaCO <sub>3</sub>	00425	125
CALCIUM As Ca	00916	38.7	Chloride	00940	4
MAGNESIUM As Mg	00927	20.9	Hardness As CaCO <sub>3</sub>	00900	
POTASSIUM	00937		Residue, Filtrable (TDS)	00515	340
SODIUM	00929	35.4	Residue, Non-Filtrable (SS)	00530	
Chromium VI		L50	Residue	00500	381
aluminum	L100/0.3		Specific Conductance	00095	540 µmhos

ORGANIZATION REQUESTING ANALYSIS (GROUP B) CYCLOMIL 500 mg/L = 0.016666666666666666 mg/l

In Rec. 17 Apr 85 684 (GROUP E) 500 mg/l

REVIEWED BY

APPROVED BY

## ENVIRONMENTAL SAMPLING DATA

(Use this space for mechanical samples)

0072 PD 013  
 128-TACTICAL CONTROL FLIGHT  
 GEN. BILLY MITCHELL FIELD  
 1919 E. GRANGE AVE  
 MILWAUKEE WI 53207

SAMPLING SITE IDENTIFIER (AFR 19-7)							
--	--	--	--	--	--	--	--

BASE WHERE SAMPLE COLLECTED

SAMPLING SITE DESCRIPTION

DATE COLLECTION BEGAN  
 (MM/DD/YY) 18 5 10 13 0,1 | TIME COLLECTION BEGAN  
 (24 hour clock) 1405

COLLECTION METHOD

GRAB  COMPOSITE HOURS 49842 -

MAIL REPORTS TO	ORIGINAL	0072 USAF HQ SOTIAH/SGPB KI SOURCE AFB, MI 49063
(circle if changed)	COPY 1	128 ARG (WTA 67776 Grange Ave, Milwaukee WI 53207)
	COPY 2	ATTN: 128 RMS/DE

SAMPLE COLLECTED BY (Name, Grade, AFSC)  
 Newcomb MSGT 90776 | SIGNATURE *Emil R. Newcomb* | AUTOVON 4722942

REASON FOR SUBMISSION  A-ACCIDENT/INCIDENT  C-COMPLAINT N-NPDES F-FOLLOWUP/CLEANUP O-OTHER (specify)

BASE SAMPLE NUMBER 6085-0077

ANALYSES REQUESTED (check appropriate blocks)

GROUP A		Hardness	00900	Residue, Settleable	50086		GROUP T
Ammonia	00610	Iron	01045	Residue, Volatile	00505	Bromoform	32104
Chemical Oxygen Demand	00340	Lead	01051	Silica	00955	Bromodichloromethane	32101
Kjeldahl Nitrogen	00625	Magnesium	00927	Specific Conductance	00095	Carbon Tetrachloride	32102
Nitrate	00620	Manganese	01055	Sulfate	00945	Chloroform	32100
Nitrite	00615	Mercury	71900	Sulfite	00740	Chloromethane	34418
Oil & Grease	00560	Nickel	01067	Surfactants -MBAS	38260	Dibromochloromethane	32105
Organic Carbon	00680	Potassium	00937	Turbidity	00076	Methylene Chloride	34423
Orthophosphate	00671	Selenium	01147			Tetrachloroethylene	34475
Phosphorus, Total	00665	Silver	01077			1,1,1-Trichloroethane	34506
		Sodium	00929			Trichloroethylene	39180
GROUP D		Thallium	01059	EHC Isomers	39340	Trichloromethanes	32080
Cyanide, Total	00720	Zinc	01092	Cbldane	39350	PCBs	39516
Cyanide, Free	00722			DDT Isomers	39370	X Complete V0-1	
				Dieldrin	39380	SCREEN	
GROUP E				Endrin	39390		
Phenols	32730	Acidity, Total	70508	Heptachlor	39410		
		Alkalinity, Total	00410	Heptachlor Epoxide	39420		
GROUP F		Alkalinity, Bicarbonate	00425	Lindane	39782		
Antimony	01097	Bromide	71870	Methoxychlor	39480		
Arsenic	01002	Carbon Dioxide	00405	Toxaphene	39400		
Barium	01007	Chloride	00940	2,4-D	39730	ON SITE ANALYSES	
Beryllium	01012	Color	00080	2,4,5-TP-Silvex	39760	Parameter	Value
Boron	01022	Fluonide	00951	2,4,5-T	39740	Flow	50050 mgd
Cadmium	01027	Iodide	71865			Chlorine, Total	50060 mg/l
Calcium	00916	Odor	00086			Dissolved Oxygen	00300 mg/l
Chromium, Total	01034	Residue, Total	00500			pH	00400 units
Chromium VI	01032	Residue Filterable(TDS)	70300			Temperature	00010 °C
Copper	01042	Residue, Nonfilterable	00530	Sulfides	00745		

COMMENTS

## LABORATORY ANALYSIS REPORT AND RECORD (General)

DATE  
25 MAR 85

FROM: USAF OEHL/SA

BROOKS AFB TX 78235-5000

6. SAMPLE IDENTITY

L.SER K. I. SAWYER AFB

SAMPLE FROM

DATE RECEIVED

14 MAR 85

LAB CONTROL NO

17687

TEST FOR

Volatile Halocarbons

Methodology: EPA Method 601

OEHL NO:	17687				DET.
BASE NO:	(EP850077)				LIMI
Bromodichloromethane	ND				0.1
Bromoform					0.2
Bromomethane					1.0
Carbon Tetrachloride					0.1
Chlorobenzene					0.2
Chloroethane					0.5
2-Chloroethylvinyl ether					0.1
Chloroform					0.1
Chloromethane					0.1
Dibromochloromethane					0.1
1,2-Dichlorobenzene					0.1
1,3-Dichlorobenzene					0.1
1,4-Dichlorobenzene					0.1
Dichlorodifluoromethane					0.1
1,1-Dichloroethane					0.1
2-Dichloroethane					0.1
1,1-Dichloroethene					0.1
trans-1,2-Dichloroethene					0.1
1,2-Dichloropropane					0.1
cis-1,3-Dichloropropene					0.1
trans-1,3-Dichloropropene					0.1
Methylene Chloride	4.7				0.1
1,1,2,2-Tetrachloroethane	ND				0.1
Tetrachloroethylene	0.2				0.1
1,1,1-Trichloroethane	2.4				0.1
1,1,2-Trichloroethane	ND				0.1
Trichloroethylene	5.8				0.1
Trichlorofluoromethane	ND				0.1
Vinyl Chloride	ND				0.1

Results in Micrograms per Liter

DATE ANALYZED: 14 MAR 85 128<sup>th</sup> - Milwaukee

REQUESTING AGENCY (Mailing Address)

USAF HOSP / 56PB  
KI Sawyer AFB, MI  
49843-5300

ND-NONE DETECTED, LESS THAN THE DETECTION LIM

TRACE-PRESENT BUT LESS THAN THE QUANTITATIVE

A. L. Willis  
TechnicianAbencky  
SAC Milwaukee